

Section 12-4 Mutations (pages 307–308)



Key Concept

- What are mutations?

Introduction (page 307)

1. What are mutations? _____

2. Is the following sentence true or false? Chromosomal mutations result from changes in a single gene. _____

Kinds of Mutations (pages 307–308)

3. Mutations that occur at a single point in the DNA sequence are _____ mutations.
4. A mutation involving the insertion or deletion of a nucleotide is a(an) _____ mutation.
5. Complete the table of types of chromosomal mutations.

CHROMOSOMAL MUTATIONS

Type	Description	Examples
		ABC•DEF → AC•DEF
Duplication		
	Part of a chromosome becomes oriented in the reverse of its usual direction	
Translocation		

6. Circle the letter of each sentence that is true about gene mutations.
- a. Point mutations affect just one nucleotide.
 - b. The substitution of one nucleotide for another in the gene never affects the function of the protein.
 - c. Point mutations that involve the insertion or deletion of a nucleotide change the reading frame of the genetic message.
 - d. Frameshift mutations affect every amino acid that follows the point of the mutation.

Significance of Mutations (page 308)

7. Mutations that cause dramatic changes in protein structure are often _____.
8. Mutations are a source of _____ in a species.
9. What is polyploidy? _____
